"D-LAY-5"
INSTALLATION
MANUAL

LANCE JOHNSON
ENGINEERING

*INTRODUCTION

THE "D-LAY-5" IS A SIMPLE BUT EXTREMELY HIGH QUALITY TIME DELAY CIRCUIT DESIGNED FOR USE WITH ALL C.D.E. ROTOR SYSTEMS THAT USE A BRAKE.

THE PHILOSOPHY OF THE "D-LAY-5" SYSTEM IS SIMPLE: "PROVIDE THE USER WITH AN AUTOMATIC FIVE SECOND SAFETY FACTOR BEFORE THE BRAKE IS ENGAGED."

THIS IS THE SOLE PURPOSE OF THE "D-LAY-5". IT ALLOWS YOU TO OPERATE YOUR ROTOR CONTROL BOX IN A NORMAL MANNER, KNOWING THAT THE BRAKING ACTION WILL ALWAYS OCCUR FIVE SECONDS AFTER THE BRAKE SWITCH IS RELEASED.

WE WILL NOT DWELL ON THE ADVANTAGES OF THIS SYSTEM SINCE ANY RADIO ENTHUSIAST KNOWS THAT ACCIDENTAL BRAKING THAT OCCURS WHILE AN ANTENNA IS IN MOTION CAN HAVE SERIOUS CONSEQUENCES.

*PREFACE TO INSTALLATION INSTRUCTIONS

TO INSTALL THE "D-LAY-5" YOU WILL NEED A PHILLIPS SCREWDRIVER, SOLDERING GUN, SOLDER, AND A PAIR OF PLIERS.

THE BASIC MOUNTING OF THE CIRCUIT BOARD IS SIMPLE, SINCE THE BOARD MOUNTS ON THE UNDERSIDE OF THE ROTOR CONTROL BOX CHASSIS USING EXISTING HOLES USED TO SECURE THE CONTROL SYSTEMS METER TRANSFORMER.

AFTER THE "D-LAY-5" IS MOUNTED ON THE CHASSIS, THE INSTALLER HAS TO SOLDER FOUR WIRES TO VARIOUS POINTS ON THE CW, CCW, AND BRAKE MICRO SWITCHES AND THE INSTALLATION IS COMPLETE.

ALTHOUGH THE INSTALLATION OF THE "D-LAY-5" IS EASY, PLEASE USE EXTREME CARE WHEN SOLDERING THE FOUR LEADS. ERRORS CAN BE DISASTROUS!

NOTE THAT THE "D-LAY-5" CIRCUIT REQUIRES NO MODIFICATIONS TO EXISTING CIRCUITRY. IF YOU WISH TO REMOVE THE UNIT, SIMPLY UNSOLDER THE FOUR LEADS, REMOVE THE "D-LAY-5" BOARD AND REPLACE THE ORIGINAL SCREWS USED TO SECURE THE METER TRANSFORMER.

*D-LAY-5 INSTALLATION INSTRUCTIONS

1) CHECK THE OPERATION OF YOUR ROTOR SYSTEM BEFORE YOU BEGIN THE INSTALLATION.

2) DISCONNECT THE ROTOR CONTROL FROM THE 117V AC OUTLET - ABSOLUTELY NO WORK IS TO BE DONE WHILE THE CONTROL BOX IS PLUGGED IN AS SERIOUS INJURY COULD OCCUR!

3) REMOVE THE TOP AND BOTTOM COVERS FROM THE ROTOR CONTROL BOX.

4) CAREFULLY RE-POSITION THE MOTOR START CAPACITOR LOCATED ON THE UNDERSIDE OF THE CONTROL BOX CHASSIS. MOUNT IT ON ANOTHER BOLT USED TO SECURE THE LARGE POWER TRANSFORMER. THIS IS NECESSARY TO PROVIDE ROOM FOR THE "D-LAY-5" CIRCUIT BOARD. (SEE SKETCH #1)

5) REMOVE THE TWO PHILLIPS SCREWS THAT SECURE THE SMALL METER TRANSFORMER AND MOUNT THE CIRCUIT BOARD THROUGH THESE CHASSIS HOLES ON THE UNDERSIDE OF THE CONTROL BOX.

   BE SURE THAT YOU REPLACE THE TWO GROUND LUGS LOCATED ON THE TOP SIDE OF THE CHASSIS TO THEIR ORIGINAL POSITION, AND CHECK YOUR LEAD DRESS UNDER THE "D-LAY-5" BOARD. (SQUASH DOWN!)

   WHEN THE CIRCUIT BOARD APPEARS FREE FROM PRESSURE SIMPLY TIGHTEN THE NUTS ON THE SIDES OF THE METER TRANSFORMER TO LOCK THE "D-LAY-5" INTO POSITION. (SEE SKETCH #2)

6) YOU ARE NOW READY TO SOLDER THE "D-LAY-5" INTO YOUR ROTOR CONTROL BOX CIRCUITRY. MAINTAIN ALL EXISTING CONNECTIONS - DO NOT DISCONNECT ANY OF THE ORIGINAL WIRES ON YOUR ROTOR CONTROL BOX. (SEE SKETCH #3)

WIRE FROM D-LAY-5 BOARD	SOLDERED TO LOCATION ON CONTROL BOX SWITCHES
RED	TO NORMALLY OPEN CONTACT ON C.C.W. MICRO SWITCH
BLACK	TO NORMALLY OPEN CONTACT ON C.W. MICRO SWITCH
WHITE	TO NORMALLY OPEN CONTACT ON BRAKE MICRO SWITCH
GREEN	TO COMMON CONTACT ON BRAKE MICRO SWITCH

* * *

7) CAREFULLY CHECK YOUR WORK FOR ERRORS - REPLACE THE TOP AND BOTTOM COVERS OF YOUR ROTOR CONTROL BOX.

8) THE INSTALLATION IS NOW COMPLETE. NOTE: SAVE THE TWO SCREWS USED TO SECURE THE METER TRANSFORMER IN THE ORIGINAL FORM.

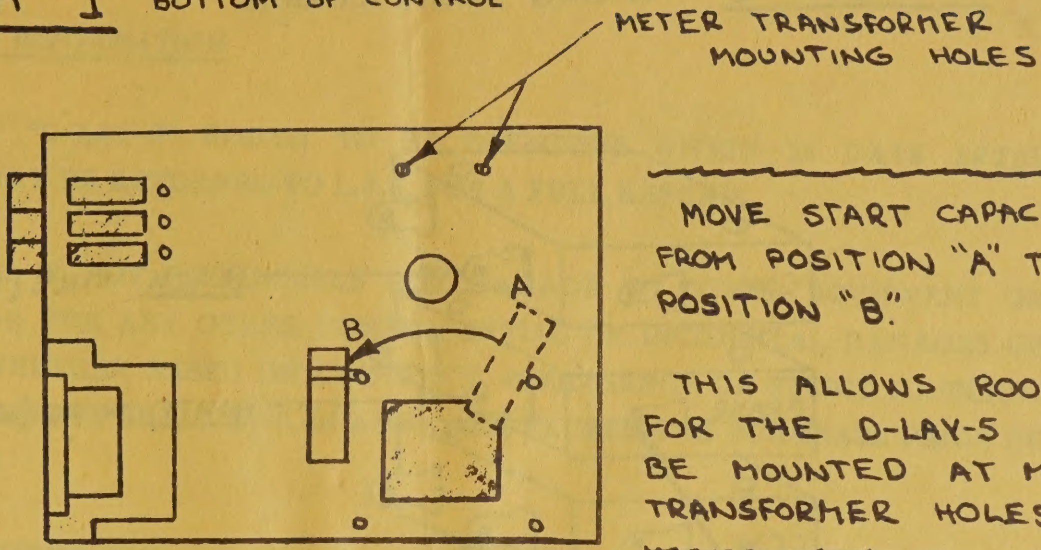
9) PLUG THE CONTROL BOX INTO THE 117V OUTLET AND BEGIN THE CHECK OUT SEQUENCE.

*CHECKING YOUR D-LAY-5

TO CHECK THE "D-LAY-5" SIMPLY DEPRESS THE BRAKE AND THE C.W. ROTATION BUTTONS. RELEASE BOTH BUTTONS AT THE SAME TIME - APPROXIMATELY FIVE SECONDS LATER LISTEN FOR THE BRAKE ENGAGING.

REPEAT THIS PROCESS FOR THE C.C.W. POSITION; IN BOTH CASES THE BRAKE WILL NOT ENGAGE UNTIL APPROXIMATELY FIVE SECONDS AFTER THE BRAKE SWITCH AND THE ROTATION SWITCH ARE RELEASED. (CONGRATULATIONS ON A SUCCESSFUL INSTALLATION!)

SKETCH #1 BOTTOM OF CONTROL

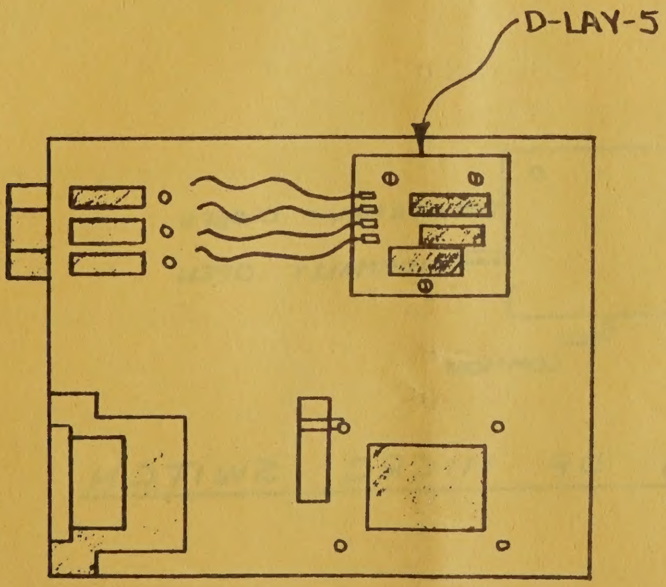


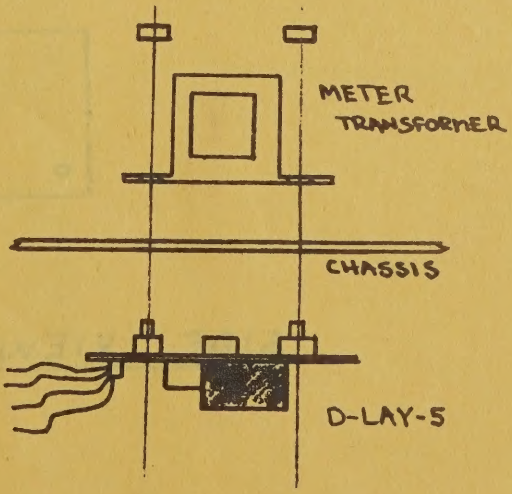
MOVE START CAPACITOR FROM POSITION "A" TO POSITION "B".

THIS ALLOWS ROOM FOR THE D-LAY-5 TO BE MOUNTED AT METER TRANSFORMER HOLES.

NOTE: THIS STEP MAY NOT BE NECESSARY ON SOME MODELS SINCE CAPACITOR MAY ALREADY BE LOCATED AT POINT "B".

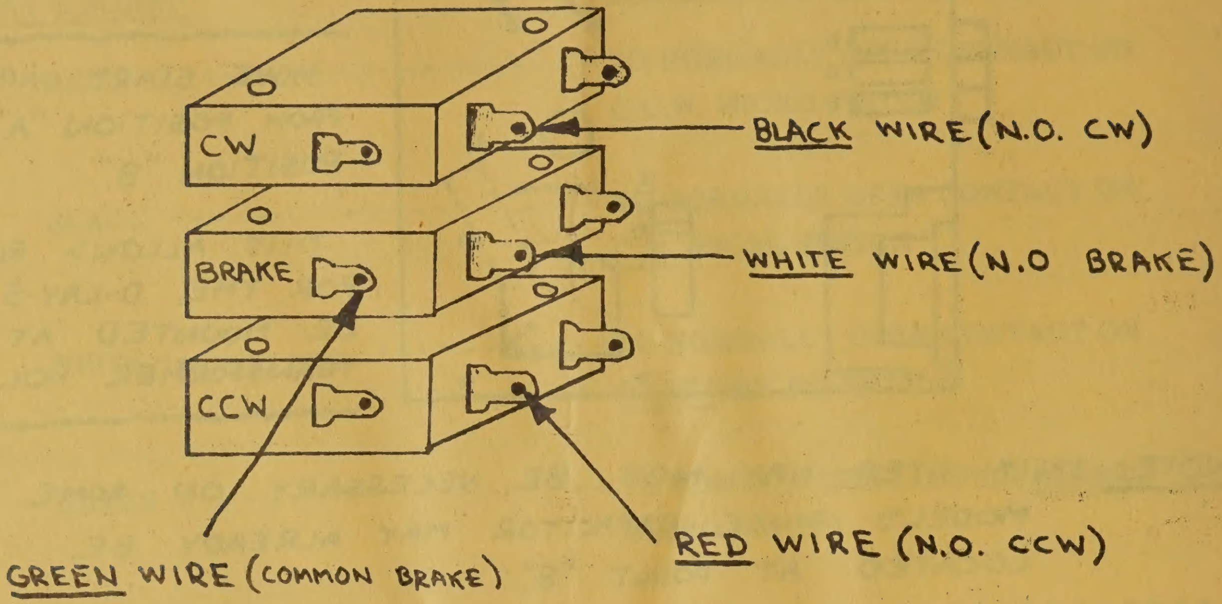
SKETCH #2 BOTTOM OF CONTROL



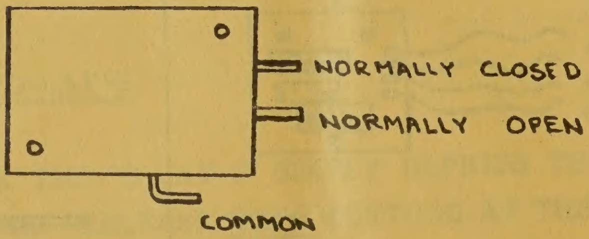


NOTE: BE SURE TO ADJUST EXISTING LEADS SO THAT THE D-LAY-5 MOUNTS FLAT ON THE CHASSIS

SKETCH #3 WIRING INSTRUCTIONS



NOTE: ONLY THE LEADS FROM THE D-LAY-5 ARE SHOWN. DO NOT DISCONNECT OR CHANGE ANY EXISTING WIRING AS SERIOUS PROBLEMS WILL DEVELOP.



SIDE VIEW OF MICRO SWITCH

*WARRANTY INFORMATION

ANY "D-LAY-5" FOUND TO BE DEFECTIVE WITHIN 30 DAYS AFTER PURCHASE MAY BE RETURNED TO L.J.E. FOR A FULL REFUND.

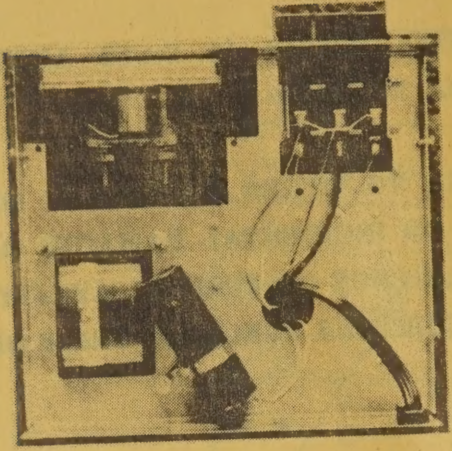
L.J.E. IS NOT RESPONSIBLE FOR DAMAGE TO OTHER EQUIPMENT OR PROPERTY OR FOR ANY OTHER CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, WHETHER BASED ON CONTRACT, NEGLIGENCE OR STRICT LIABILITY. MAXIMUM LIABILITY SHALL NOT, IN ANY CASE, EXCEED THE PURCHASE PRICE OF THE D-LAY-5.

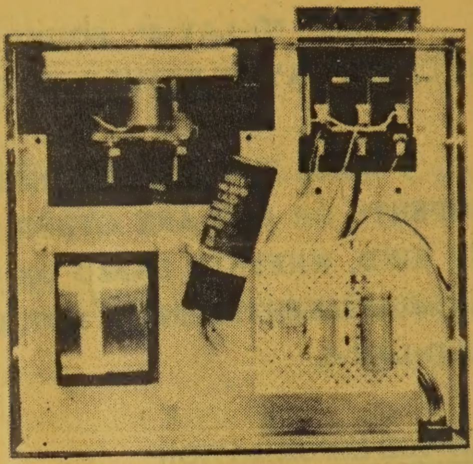
*SERVICE INFORMATION

ANY "D-LAY-5" REQUIRING SERVICE AFTER THE WARRANTY PERIOD WILL BE REPAIRED FOR A FLAT RATE OF $7.50 IF RETURNED IN GOOD CONDITION TO:

LANCE JOHNSON ENGINEERING
P.O. BOX 7363
KANSAS CITY, MISSOURI 64116

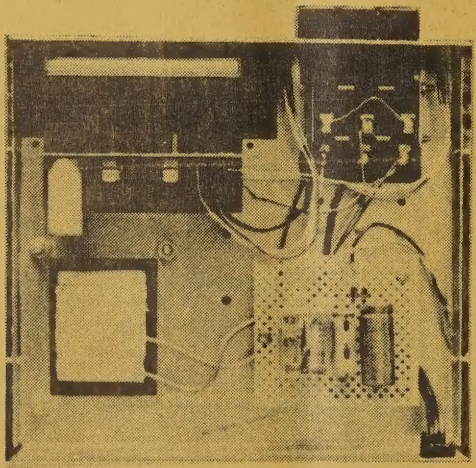
EXAMPLE: USING HAM III CONTROL BOX


(ORIGINAL LAYOUT)


(D-LAY-5 MOUNTED)

NOTE: ON SOME UNITS YOU MAY WANT TO USE ANOTHER POSITION FOR MOUNTING THE CAPACITOR - JUST BE CAREFUL NOT TO DAMAGE THE LEADS.

EXAMPLE: USING TAILTWISTER CONTROL BOX


(D- LAY-5 MOUNTED)

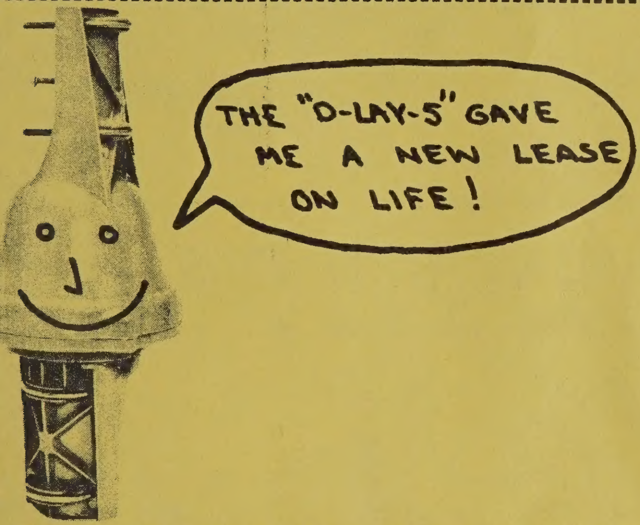
NOTE: ON THE TAILTWISTER MODEL THE CAPACITOR IS ON THE OTHER SIDE OF THE CHASSIS. THUS THE INSTALLATION IS EASY.

INTRODUCING THE ...

D-LAY-5

AN L.J.E.
INNOVATION

A ROTOR BRAKE DELAY DESIGNED FOR USE WITH C.D.E. ROTORS.
MODELS: CD-44, CD-45, HAM II, HAM III, AND TAILTWISTER


THE "D-LAY-5" GAVE ME A NEW LEASE ON LIFE!

- Not a kit, the "D-LAY-5" is a complete circuit board. (Nothing else to buy!)
- Installs easily inside your rotor control box in 15-20 minutes.
- Automatically delays brake action for 5.0 seconds. (Fixed time constant)
- Protects tower and antenna from shock caused by abrupt braking.
- Superior quality components.
- Great for DX'ers and contest types with large arrays.

THE D-LAY-5 WILL WORK WITH THE FOLLOWING ROTORS:

- Each "D-LAY-5" comes complete with detailed installation instructions.
- All units carry a 30 day limited warranty.
- L.J.E. assumes no responsibility for damage or injury caused by improper installation or misuse of the "D-LAY-5".

SEND ME ________ "D-LAY-5 UNIT(S)

AT $19.95 Per Unit.

☐ Check or Money Order enclosed.

☐ Send C.O.D. - I will pay C.O.D. charges.

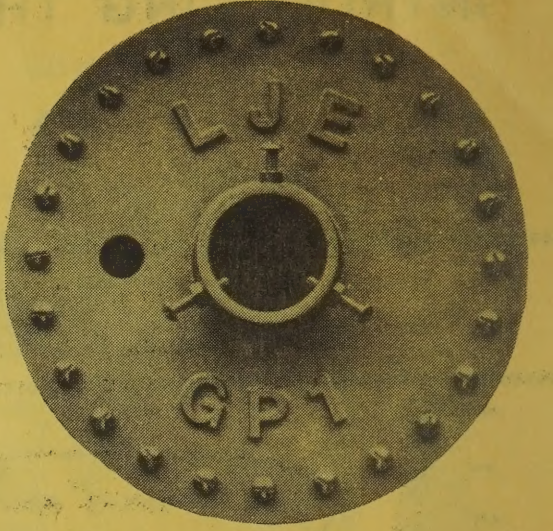
MY ROTOR MODEL IS ____________________
NAME ______________________________
ADDRESS ____________________________
CITY ______________ STATE ________ ZIP ________

LANCE JOHNSON ENGINEERING --- **P.O. BOX 7363**
K.C., MO. 64116

INTRODUCING THE...

GP-1

(ground plane-one)



THE SOLUTION TO YOUR GROUND RADIAL SYSTEM

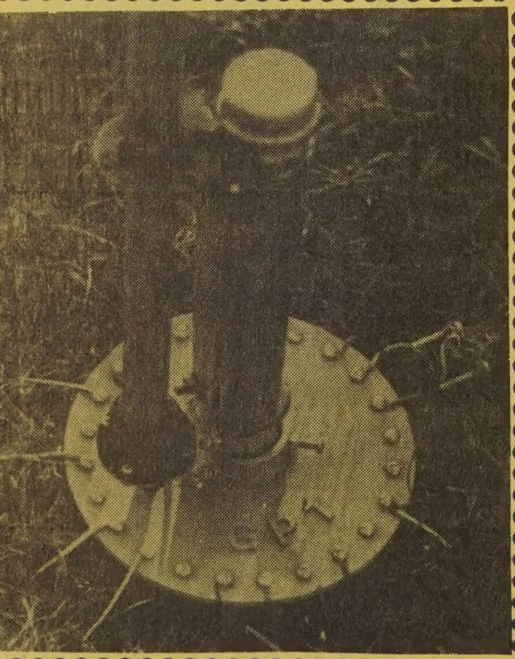
GROUND RADIALS WORK! IT'S A WELL KNOWN FACT THAT A GOOD RADIAL SYSTEM WILL GREATLY IMPROVE THE EFFICIENCY OF YOUR VERTICAL ANTENNA.

UNFORTUNATELY, A PROBLEM DEVELOPS WHEN ONE ATTEMPTS TO CONNECT A LARGE NUMBER OF RADIALS TO THE BASE OF THE ANTENNA - UNTIL TODAY!

LANCE JOHNSON ENGINEERING HAS DEVELOPED A CONVENIENT TWENTY FOUR POINT BUSS THAT SOLVES THIS PROBLEM IN STYLE.

USING THE GP-1, YOU CAN CONNECT A LARGE NUMBER OF RADIALS TO THE BASE OF YOUR ANTENNA IN A NEAT AND EFFICIENT MANNER.

ONLY
$24.95
POSTAGE PAID



- CAST "ALUMALOY" CONSTRUCTION (1/4" THICK - BUILT LIKE A TANK)
- MOUNTS SECURELY ON MASTS OF UP TO 2" IN DIAMETER.
- TWENTY FOUR LARGE BOLTS WILL EASILY HANDLE ELABORATE SYSTEMS.
- LARGE 10" DIAMETER BASE WILL FIT INSIDE POPULAR TOWER SECTIONS.
- CONVENIENT OPENING FOR FEEDLINE ROUTING.
- PERFECT FOR FIELD-DAY AND PORTABLE OPERATIONS.

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ORDER ONE!